Exhibit 300: Capital Asset Plan and Business Case Summary

Part I: Summary Information And Justification (All Capital Assets)

Section A: Overview (All Capital Assets)

1. Date of Submission:	4/10/2009
2. Agency:	Department of Energy
3. Bureau:	Energy Programs
4. Name of this Capital Asset:	LBNL NERSC-Direct mission
5. Unique Project (Investment) Identifier: (For IT investment only, see section 53. For all other, use agency ID system.)	019-20-01-21-01-2019-00
6. What kind of investment will this be in FY 2010? (Please NOTE: Investments moving to O&M in FY 2010, with Planning/Acquisition activities prior to FY 2010 should not select O&M. These investments should indicate their current status.)	Mixed Life Cycle
7. What was the first budget year this investment was submitted to OMB?	FY2001 or earlier

8. Provide a brief summary and justification for this investment, including a brief description of how this closes in part or in whole an identified agency performance gap:

LBNL NERSC, sponsored by the Department of Energy (DOE) Office of Science (SC) acquires, operates and maintains a supercomputer facility at Lawrence Berkeley National Laboratory in Berkeley California. The NERSC facility, designated as DOE's Flagship Supercomputing Facility, provides one of the most effective and productive unclassified high end computing resources for computational sciences in the world. This investment supports the programmatic goals of the DOE and SC by operating increasingly higher performance computers to enable advances in scientific research sponsored by the Department of Energy and its collaborators. This investment addresses the performance gap by reducing the deficit between computational research hours needed by and delivered to science programs. This growth trend to support U.S. science competitiveness is expected to continue. Additionally, the growth rate is expected to be compounded by initiatives like Scientific Discovery through Advanced Computing-II and the Innovative and Novel Computational Impact on Theory and Experiment Programs. Without the additional hours, scientists will not deliver world class science. The performance targets are inline DOE theme 3 Scientific Discovery and DOE strategic goal 3.2 and the Office of Science's strategic goals to close the computational gap for open science research. NERSC directly supports the mission through its business functions: (1) service to citizens, general scientific innovation, scientific and technological research and innovations: (2) mode of delivery, knowledge creation and management, research and development. Additionally, NERSC has met and exceeded the PART metric for the past four years. Finally, the management of this investment involves extensive collaboration with the science community to include DOE energy researchers, NASA, DOD, NSF, university researchers, industrial research collaborators and international science bodies.

9. Did the Agency's Executive/Investment Committee approve this request?	Yes
a. If "yes," what was the date of this approval?	8/21/2008
10. Did the Project Manager review this Exhibit?	Yes
11. Contact information of Program/Project Manager?	
Name	Yip, Warren
Phone Number	510-486-4297
Email	warren.yip@bso.science.doe.gov
a. What is the current FAC-P/PM (for civilian agencies) or DAWIA (for defense agencies) certification level of the program/project manager?	Waiver Issued
b. When was the Program/Project Manager Assigned?	8/21/2007
c. What date did the Program/Project Manager receive the FAC-P/PM certification? If the certification has not been issued, what is the anticipated date for certification?	9/8/2009
12. Has the agency developed and/or promoted cost effective, energy-efficient and environmentally sustainable techniques or practices for this project?	Yes
a. Will this investment include electronic assets (including computers)?	Yes

b. Is this investment for new construction or major retrofit of a Federal building or facility? (answer applicable to non-IT assets only)	No
1. If "yes," is an ESPC or UESC being used to help fund this investment?	
2. If "yes," will this investment meet sustainable design principles?	
3. If "yes," is it designed to be 30% more energy efficient than relevant code?	
13. Does this investment directly support one of the PMA initiatives?	Yes
If "yes," check all that apply:	R and D Investment Criteria Competitive Sourcing Human Capital
a. Briefly and specifically describe for each selected how this asset directly supports the identified initiative(s)? (e.g. If E-Gov is selected, is it an approved shared service provider or the managing partner?)	This asset supports the PMA initiatives listed by optimizing computer systems to enable scientific discovery, providing high-performance scientific computational resources to the scientific community, including DOE and non-DOE funded researchers at NASA, DOD,NSF. Outsourcing to leading technology providers, IBM, CRAY, SGI, Linux. Enabling the nation's scientists to utilize the latest technologies to solve DOE's toughest scientific issues by allowing users access to computational resources.
14. Does this investment support a program assessed using the Program Assessment Rating Tool (PART)? (For more information about the PART, visit www.whitehouse.gov/omb/part.)	Yes
a. If "yes," does this investment address a weakness found during a PART review?	Yes
b. If "yes," what is the name of the PARTed program?	10000074 - Advanced Scientific Computing Research
c. If "yes," what rating did the PART receive?	Moderately Effective
15. Is this investment for information technology?	Yes

If the answer to Question 15 is "Yes," complete questions 16-23 below. If the answer is "No," do not answer questions 16-23.

For information technology investments only:

16. What is the level of the IT Project? (per CIO Council PM Guidance)	Level 2
17. In addition to the answer in 11(a), what project management qualifications does the Project Manager have? (per CIO Council PM Guidance)	(1) Project manager has been validated as qualified for this investment
18. Is this investment or any project(s) within this investment identified as "high risk" on the Q4 - FY 2008 agency high risk report (per OMB Memorandum M-05-23)	No
19. Is this a financial management system?	No
a. If "yes," does this investment address a FFMIA compliance area?	
1. If "yes," which compliance area:	
2. If "no," what does it address?	

b. If "yes," please identify the system name(s) and system acronym(s) as reported in the most recent financial systems inventory update required by Circular A-11 section 52

20. What is the percentage breakout for the total FY2010 funding request for the following? (This should total 100%)

Hardware	59
Software	2
Services	39
Other	0
21. If this project produces information dissemination products for the public, are these products published to the	N/A

Internet in conformance with OMB Memorandum 05-04 and included in your agency inventory, schedules and priorities?	
22. Contact information of individual responsible for privacy related questions:	
Name	Sumikawa, Denise
Phone Number	510-486-5519
Title	Privacy Officer
E-mail	dasumikawa@lbl.gov
23. Are the records produced by this investment appropriately scheduled with the National Archives and Records Administration's approval?	Yes
Question 24 must be answered by all Investments:	
24. Does this investment directly support one of the GAO High Risk Areas?	No

Section B: Summary of Spending (All Capital Assets)

1. Provide the total estimated life-cycle cost for this investment by completing the following table. All amounts represent budget authority in millions, and are rounded to three decimal places. Federal personnel costs should be included only in the row designated "Government FTE Cost," and should be excluded from the amounts shown for "Planning," "Full Acquisition," and "Operation/Maintenance." The "TOTAL" estimated annual cost of the investment is the sum of costs for "Planning," "Full Acquisition," and "Operation/Maintenance." For Federal buildings and facilities, life-cycle costs should include long term energy, environmental, decommissioning, and/or restoration costs. The costs associated with the entire life-cycle of the investment should be included in this report.

Table 1: SUMMARY OF SPENDING FOR PROJECT PHASES (REPORTED IN MILLIONS)
(Estimates for BY+1 and beyond are for planning purposes only and do not represent budget decisions)

	PY-1 and earlier	PY 2008	CY 2009	BY 2010	BY+1 2011	BY+2 2012	BY+3 2013	BY+4 and beyond	Total
Planning:	2.49	0.56	1.94	0.5	0.8	1.8	0.6	0.8	9.49
Acquisition:	8	0	7.76	0	0	5.7	0	0	21.46
Subtotal Planning & Acquisition:	10.49	0.56	9.70	0.5	0.8	7.5	0.6	0.8	30.95
Operations & Maintenance:	64.49	56.64	42.09	54.29	59.2	57.5	64.4	65.78	464.39
TOTAL:	74.98	57.20	51.79	54.79	60.0	65.0	65.0	66.58	495.34
Government FTE Costs should not be included in the amounts provided above.									
Government FTE Costs	0.04	0.03	0.02	0.02	0.02	0.02	0.02	0	0.17
Number of FTE represented by Costs:	2	1	1	1	1	1	1	0	8

Note: For the multi-agency investments, this table should include all funding (both managing partner and partner agencies). Government FTE Costs should not be included as part of the TOTAL represented.

2. Will this project require the agency to hire additional FTE's?	No
a. If "yes," How many and in what year?	

3. If the summary of spending has changed from the FY2009 President's budget request, briefly explain those changes:

Section C: Acquisition/Contract Strategy (All Capital Assets)

1. Complete the table for all (including all non-Federal) contracts and/or task orders currently in place or planned for this investment. Total Value should include all option years for each contract. Contracts and/or task orders completed do not need to be included.

Contracts/Task Orders Table: * Costs in millions

Contract or Task Order Number	Type of Contract/ Task Order (In accordance with FAR Part 16)	Has the contract been awarded (Y/N)	If so what is the date of the award? If not, what is the planned award date?	Start date of Contract/ Task Order	End date of Contract/ Task Order	Total Value of Contract/ Task Order ($M)	Is this an Interagency Acquisition? (Y/N)	Is it performance based? (Y/N)	Competitively awarded? (Y/N)	What, if any, alternative financing option is being used? (ESPC, UESC, EUL, N/A)	Is EVM in the contract? (Y/N)	Does the contract include the required security & privacy clauses? (Y/N)	Name of CO	CO Contact information (phone/email)	Contracting Officer FAC-C or DAWIA Certification Level (Level 1, 2, 3, N/A)	If N/A, has the agency determined the CO assigned has the competencies and skills necessary to support this acquisition? (Y/N)
DE-AC02-05CH11231	Cost Reimbursable	Yes	4/19/2005	6/1/2005	5/30/2025	387.715	No	Yes	Yes	NA	Yes	Yes	Marshall, Charles	510-486-5184 / cwmarshall@lbl.gov	Level 3	
6806365-Cray	Firm-fixed Price	Yes	7/1/2006	7/1/2006	8/9/2013	52.045	No	Yes	Yes	NA	No	Yes	Marshall, Charles	510-486-5184 / cwmarshall@lbl.gov	Level 3	
	Firm Fixed Price	No	6/30/2009	7/1/2009	3/1/2016	54	No	Yes	Yes	NA	No	Yes	marshall, Charles	510-486-5184 / cmarshall@lbl.gov	Level 3	

2. If earned value is not required or will not be a contract requirement for any of the contracts or task orders above, explain why:

Earned value is not a contract requirement for the IBM or the Cray subcontracts because the Laboratory meets earned value requirements set by DOE without passing on the same requirements to their subcontracts. NERSC's major contracts such as the IBM and Cray contracts are firm fixed price contracts with fixed price performance milestones. If schedule or performance requirements are not met, the price and delivery of services is renegotiated to compensate for the undelivered performance.

3. Do the contracts ensure Section 508 compliance?	Yes
a. Explain why not or how this is being done?	California State law provides functional equivalence to Section 508 compliance which applies to Federal employees and members of the public seeking information from Federal Agencies. LBNL is operated by the University of California and must comply with California State Law requiring reasonable accommodation to members of the public and employees.
4. Is there an acquisition plan which reflects the requirements of FAR Subpart 7.1 and has been approved in accordance with agency requirements?	Yes
a. If "yes," what is the date?	6/1/2008
1. Is it Current?	Yes
b. If "no," will an acquisition plan be developed?	
1. If "no," briefly explain why:	

Section D: Performance Information (All Capital Assets)

In order to successfully address this area of the exhibit 300, performance goals must be provided for the agency and be linked to the annual performance plan. The investment must discuss the agency's mission and strategic goals, and performance measures (indicators) must be provided. These goals need to map to the gap in the agency's strategic goals and objectives this investment is designed to fill. They are the internal and external performance benefits this investment is expected to deliver to the agency (e.g., improve efficiency by 60 percent, increase citizen participation by 300 percent a year to achieve an overall citizen participation rate of 75 percent by FY 2xxx, etc.). The goals must be clearly measurable investment outcomes, and if applicable, investment outputs. They do not include the completion date of the module, milestones, or investment, or general goals, such as, significant, better, improved that do not have a quantitative or qualitative measure.

Agencies must use the following table to report performance goals and measures for the major investment and use the Federal Enterprise Architecture (FEA) Performance Reference Model (PRM). Map all Measurement Indicators to the corresponding "Measurement Area" and "Measurement Grouping" identified in the PRM. There should be at least one Measurement Indicator for each of the four different Measurement Areas (for each fiscal year). The PRM is available at www.egov.gov. The table can be extended to include performance measures for years beyond the next President's Budget.

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
2007	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	User Survey Overall Satisfaction Score	5.0 (out of 7.0)	Attain user satisfaction score greater then 5.25. Baseline score remains equal; NERSC improves annually by addressing items scoring 5.0 or lower. The systems/applications the survey covers change as new systems and software upgrades are implemented	A score of 6.30 was achieved on the 2007/2008 Survey
2007	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation	Number of Computation Resource Hours (CRH s) delivered	Provide 14.6 Million CRHs for allocation	Deliver greater then or equal to 14.6 Million CRHs	FY07 Final Allocation Usage was 16.6M CRHs compared to an target of 14.6M CRHs

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	required for U.S. scientific primacy.							
2007	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability	Parallel Systems Scheduled Availability	Parallel computational systems scheduled availability is at least 95% for systems after 24 months of production operation	Maintain major systems one year old or less at 90%, major systems between one and two years at 93%, and major systems more than two years at 95%.	FY07 availability was 98.2% as of 30 Sep 2007.
2008	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	Percent of user problems that are addressed within 3 working days, either by resolving them or by communicating a resolution plan to the user	80 percent of user problems are addressed within 3 working days	Address user problems at or higher than baseline, including problems related to new systems recently deployed. NERSC improves annually because the systems and applications supported change as new systems and software upgrades are implemented.	Exceeded Target. 84.8% of user problems were addressed within 3 days as of Sep 30 2008.
2008	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	User Survey Overall Satisfaction Score	5.25 (out of 7.0)	Attain user satisfaction score greater than 5.25. Baseline score remains equal; NERSC improves annually by addressing items scoring 5.0 or lower. The systems/applications the survey covers change as new systems and software upgrades are implemented	Expected results are greater than 5.25. Actual Results for the 2008/2009 survery will be available in the July/August 2009
2008	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation	Number of Computation Resource Hours (CRHs) delivered	Provide 69.2 Million CRHs for allocation	Provide greater than or equal to 69.2 Million CRHs for allocation	Exceeded Target. Allocated 79M CRHs for FY08; Provided 133M CRHs for FY08 YTD as of 9/30/2008.
2008	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation	Number of Storage Resource Units (SRUs) delivered	Provide 20 Million SRUs for allocation	Provide greater than or equal to 20 Million SRUs for allocation	Exceeded Target. Allocated 32M SRUs for FY08; Priovided 26M SRUs for FY08 YTD as of 9/30/2008.

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	infrastructure required for U.S. scientific primacy.							
2008	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Processes and Activities	Security and Privacy	Privacy	DOE Certification and Accreditation (C & A)	NERSC maintains a valid DOE C & A	NERSC maintains a valid DOE C & A	Valid DOE C&A maintained, renewed on 9/14/2007
2008	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability	Parallel Systems Scheduled Availability	Parallel computational systems scheduled availability is at least 95% for systems after 24 months of production operation	Maintain major systems one year old or less at 90%, major systems between one and two years at 93%, and major systems more than two years at 95%.	Exceeded Target. Parallel systems scheduled availability equals 95.77% for major systems greater than 1 year. NA for major systems between 1 and 2 years (none apply) and 99.65% for major systems greater than 2 years as of 10/31/2008.
2009	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	User Survey Overall Satisfaction Score	5.25 (out of 7.0)	Attain user satisfaction score greater than 5.25. Baseline score remains equal; NERSC improves annually by addressing items scoring 5.0 or lower. The systems/applications the survey covers change as new systems and software upgrades are implemented	Expected results are greater than 5.25. Actual results for the 2009/2010 user survey will be available in July/August 2010.
2009	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	Percent of user problems that are addressed within 3 working days, either by resolving them or by communicating a resolution plan to the user	80 percent of user problems are addressed within 3 working days	Address user problems at or higher than baseline, including problems related to new systems recently deployed. NERSC improves annually because the systems supported change as new systems and software upgrades are implemented.	Through 1/31/2009 84.8% of user problems were addresssed within 3 working days for FY09
2009	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.							
2009	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2009	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Processes and Activities	Security and Privacy	Privacy	DOE Certification and Accreditation (C & A)	NERSC maintains a valid DOE C & A	NERSC maintains a valid DOE C & A	Valid DOE C&A maintained, renewed on 9/14/2007
2009	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability				
2010	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	User Survey Overall Satisfaction Score	5.25 (out of 7.0)	Attain user satisfaction score greater then 5.25. Baseline score remains equal; NERSC improves annually by addressing items scoring 5.0 or lower. The systems/applications the survey covers change as new systems and software upgrades are implemented	Expected results are greater than 5.25. Actual results for the 2010/2011 user survey will be available in July/August 2010.
2010	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and	Customer Results	Customer Benefit	Customer Satisfaction	Percent of user problems that are addressed within 3 working days, either by resolving them or by communicating a resolution plan to the user	80 percent of user problems are addressed within 3 working days	Address user problems at or higher than baseline, including problems related to new systems recently deployed. NERSC improves annually because the	Expected percentage of problems addressed within 3 days: 80%; actual percentage will be available 2QFY11.

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	infrastructure required for U.S. scientific primacy.						systems and applications supported change as new systems and software upgrades are implemented.	
2010	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2010	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2010	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Processes and Activities	Security and Privacy	Privacy	DOE Certification and Accreditation (C & A)	NERSC maintains a valid DOE C & A	NERSC maintains a valid DOE C & A	Expected date for valid DOE C&A: 9/14/2010
2010	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability				
2011	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure	Customer Results	Customer Benefit	Customer Satisfaction	User Survey Overall Satisfaction Score	5.25 (out of 7.0)	Attain user satisfaction score greater then 5.25. Baseline score remains equal; NERSC improves annually by addressing items scoring 5.0 or lower. The systems/applications the survey	Expected results are greater than 5.25. Actual results for the 2010/2011 user survey will be available in July/August 2011

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	required for U.S. scientific primacy.						covers change as new systems and software upgrades are implemented	
2011	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	Percent of user problems that are addressed within 3 working days, either by resolving them or by communicating a resolution plan to the user	80 percent of user problems are addressed within 3 working days	Address user problems at or higher than baseline, including problems related to new systems recently deployed. NERSC improves annually because the systems and applications supported change as new systems and software upgrades are implemented.	Expected percentage of problems addressed within 3 days: 80%; actual percentage will be available 2QFY12.
2011	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2011	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2011	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Processes and Activities	Security and Privacy	Privacy	DOE Certification and Accreditation (C & A)	NERSC maintains a valid DOE C & A	NERSC maintains a valid DOE C & A	Expected date for valid DOE C&A: 9/14/2010
2011	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and	Technology	Reliability and Availability	Availability				

Performance Information Table								
Fiscal Year	**Strategic Goal(s) Supported**	**Measurement Area**	**Measurement Category**	**Measurement Grouping**	**Measurement Indicator**	**Baseline**	**Target**	**Actual Results**
	infrastructure required for U.S. scientific primacy.							
2012	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	User Survey Overall Satisfaction Score	5.25 (out of 7.0)	Attain user satisfaction score greater then 5.25. Baseline score remains equal; NERSC improves annually by addressing items scoring 5.0 or lower. The systems/applications the survey covers change as new systems and software upgrades are implemented	Expected results are greater than 5.25. Actual results for the 2010/2011 user survey will be available in July/August 2012
2012	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	Percent of user problems that are addressed within 3 working days, either by resolving them or by communicating a resolution plan to the user	80 percent of user problems are addressed within 3 working days	Address user problems at or higher than baseline, including problems related to new systems recently deployed. NERSC improves annually because the systems and applications supported change as new systems and software upgrades are implemented.	Expected percentage of problems addressed within 3 days: 80%; actual percentage will be available 2QFY13.
2012	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2012	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2012	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory	Processes and Activities	Security and Privacy	Security	DOE Certification and Accreditation (C & A)	NERSC maintains a valid DOE C & A	NERSC maintains a valid DOE C & A	Expected date for valid DOE C&A: 9/14/2010

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	capabilities and infrastructure required for U.S. scientific primacy.							
2012	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability				
2013	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	User Survey Overall Satisfaction Score	5.25 (out of 7.0)	Attain user satisfaction score greater then 5.25. Baseline score remains equal; NERSC improves annually by addressing items scoring 5.0 or lower. The systems/applications the survey covers change as new systems and software upgrades are implemented	Expected results are greater than 5.25. Actual results for the 2010/2011 user survey will be available in July/August 2013
2013	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	Percent of user problems that are addressed within 3 working days, either by resolving them or by communicating a resolution plan to the user	80 percent of user problems are addressed within 3 working days	Address user problems at or higher than baseline, including problems related to new systems recently deployed. NERSC improves annually because the systems and application supported change as new systems and software upgrades are implemented.	Expected percentage of problems addressed within 3 days: 80%; actual percentage will be available 2QFY14.
2013	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2013	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				

Performance Information Table

Fiscal Year	Strategic Goal(s) Supported	Measurement Area	Measurement Category	Measurement Grouping	Measurement Indicator	Baseline	Target	Actual Results
	laboratory capabilities and infrastructure required for U.S. scientific primacy.							
2013	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Processes and Activities	Security and Privacy	Security	DOE Certification and Accreditation (C & A)	NERSC maintains a valid DOE C & A	NERSC maintains a valid DOE C & A	Expected date for valid DOE C&A: 9/14/2013
2013	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability				
2014	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	User Survey Overall Satisfaction Score	5.25 (out of 7.0)	Attain user satisfaction score greater then 5.25. Baseline score remains equal; NERSC improves annually by addressing items scoring 5.0 or lower. The systems/applications the survey covers change as new systems and software upgrades are implemented	Expected results are greater than 5.25. Actual results for the 2010/2011 user survey will be available in July/August 2014
2014	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Customer Results	Customer Benefit	Customer Satisfaction	Percent of user problems that are addressed within 3 working days, either by resolving them or by communicating a resolution plan to the user	80 percent of user problems are addressed within 3 working days	Address user problems at or higher than baseline, including problems related to new systems recently deployed. NERSC improves annually because the systems and application supported change as new systems and software upgrades are implemented.	Expected percentage of problems addressed within 3 days: 80%; actual percentage will be available 2QFY15.
2014	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				

Performance Information Table								
Fiscal Year	**Strategic Goal(s) Supported**	**Measurement Area**	**Measurement Category**	**Measurement Grouping**	**Measurement Indicator**	**Baseline**	**Target**	**Actual Results**
	provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.							
2014	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Mission and Business Results	General Science and Innovation	Scientific and Technological Research and Innovation				
2014	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Processes and Activities	Security and Privacy	Security	DOE Certification and Accreditation (C & A)	NERSC maintains a valid DOE C & A	NERSC maintains a valid DOE C & A	Expected date for valid DOE C&A: 9/14/2013
2014	GOAL 3.2 Foundations of Science Deliver the scientific facilities, train the next generation of scientist and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.	Technology	Reliability and Availability	Availability				

Section E: Security and Privacy (IT Capital Assets only)

In order to successfully address this area of the business case, each question below must be answered at the system/application level, not at a program or agency level. Systems supporting this investment on the planning and operational systems security tables should match the systems on the privacy table below. Systems on the Operational Security Table must be included on your agency FISMA system inventory and should be easily referenced in the inventory (i.e., should use the same name or identifier).

For existing Mixed-Life Cycle investments where enhancement, development, and/or modernization is planned, include the investment in both the "Systems in Planning" table (Table 3) and the "Operational Systems" table (Table 4). Systems which are already operational, but have enhancement, development, and/or modernization activity, should be included in both Table 3 and Table 4. Table 3 should reflect the planned date for the system changes to be complete and operational, and the planned date for the associated C&A update. Table 4 should reflect the current status of the requirements listed. In this context, information contained within Table 3 should characterize what updates to testing and documentation will occur before implementing the enhancements; and Table 4 should characterize the current state of the materials associated with the existing system.

All systems listed in the two security tables should be identified in the privacy table. The list of systems in the "Name of System" column of the privacy table (Table 8) should match the systems listed in columns titled "Name of System" in the security tables (Tables 3 and 4). For the Privacy table, it is possible that there may not be a one-to-one ratio between the list of systems and the related privacy documents. For example, one PIA could cover multiple systems. If this is the case, a working link to the PIA may be listed in column (d) of the privacy table more than once (for each system covered by the PIA).

The questions asking whether there is a PIA which covers the system and whether a SORN is required for the system are discrete from the narrative fields. The narrative column provides an opportunity for free text explanation why a working link is

not provided. For example, a SORN may be required for the system, but the system is not yet operational. In this circumstance, answer "yes" for column (e) and in the narrative in column (f), explain that because the system is not operational the SORN is not yet required to be published.

Please respond to the questions below and verify the system owner took the following actions:

1. Have the IT security costs for the system(s) been identified and integrated into the overall costs of the investment?:

a. If "yes," provide the "Percentage IT Security" for the budget year:

2. Is identifying and assessing security and privacy risks a part of the overall risk management effort for each system supporting or part of this investment?

3. Systems in Planning and Undergoing Enhancement(s), Development, and/or Modernization - Security Table(s):

Name of System	Agency/ or Contractor Operated System?	Planned Operational Date	Date of Planned C&A update (for existing mixed life cycle systems) or Planned Completion Date (for new systems)
SC LBNL NERSC/NERSC 6			
SC LBNL NERSC/NERSC 7			
SC LBNL NERSC/NERSC 8			

4. Operational Systems - Security Table:

Name of System	Agency/ or Contractor Operated System?	NIST FIPS 199 Risk Impact level (High, Moderate, Low)	Has C&A been Completed, using NIST 800-37? (Y/N)	Date Completed: C&A	What standards were used for the Security Controls tests? (FIPS 200/NIST 800-53, Other, N/A)	Date Completed: Security Control Testing	Date the contingency plan tested
SC LBNL NERSC Enclave							

5. Have any weaknesses, not yet remediated, related to any of the systems part of or supporting this investment been identified by the agency or IG?

a. If "yes," have those weaknesses been incorporated into the agency's plan of action and milestone process?

6. Indicate whether an increase in IT security funding is requested to remediate IT security weaknesses?

a. If "yes," specify the amount, provide a general description of the weakness, and explain how the funding request will remediate the weakness.

7. How are contractor security procedures monitored, verified, and validated by the agency for the contractor systems above?

8. Planning & Operational Systems - Privacy Table:

(a) Name of System	(b) Is this a new system? (Y/N)	(c) Is there at least one Privacy Impact Assessment (PIA) which covers this system? (Y/N)	(d) Internet Link or Explanation	(e) Is a System of Records Notice (SORN) required for this system? (Y/N)	(f) Internet Link or Explanation
SC LBNL NERSC Enclave	No	No	No, because the system does not contain, process, or transmit personal identifying information.	No	The system is not a privacy system of records
SC LBNL NERSC/NERSC 6	Yes	No	No, because the system does not contain, process, or transmit personal identifying information.	No	The system is not a privacy system of records
SC LBNL NERSC/NERSC 7	Yes	No	No, because the system does not contain, process, or transmit personal identifying information.	No	The system is not a privacy system of records
SC LBNL NERSC/NERSC 8	Yes	No	No, because the system does not contain, process, or transmit	No	The system is not a privacy system of records

8. Planning & Operational Systems - Privacy Table:

(a) Name of System	(b) Is this a new system? (Y/N)	(c) Is there at least one Privacy Impact Assessment (PIA) which covers this system? (Y/N)	(d) Internet Link or Explanation	(e) Is a System of Records Notice (SORN) required for this system? (Y/N)	(f) Internet Link or Explanation
			personal identifying information.		

Details for Text Options:
Column (d): If yes to (c), provide the link(s) to the publicly posted PIA(s) with which this system is associated. If no to (c), provide an explanation why the PIA has not been publicly posted or why the PIA has not been conducted.

Column (f): If yes to (e), provide the link(s) to where the current and up to date SORN(s) is published in the federal register. If no to (e), provide an explanation why the SORN has not been published or why there isn't a current and up to date SORN.

Note: Working links must be provided to specific documents not general privacy websites. Non-working links will be considered as a blank field.

Section F: Enterprise Architecture (EA) (IT Capital Assets only)

In order to successfully address this area of the capital asset plan and business case, the investment must be included in the agency's EA and Capital Planning and Investment Control (CPIC) process and mapped to and supporting the FEA. The business case must demonstrate the relationship between the investment and the business, performance, data, services, application, and technology layers of the agency's EA.

1. Is this investment included in your agency's target enterprise architecture?	Yes
a. If "no," please explain why?	
2. Is this investment included in the agency's EA Transition Strategy?	Yes
a. If "yes," provide the investment name as identified in the Transition Strategy provided in the agency's most recent annual EA Assessment.	Office of Science, LBNL National Energy Research Scientific Computing Center (SC LBNL NERSC)
b. If "no," please explain why?	
3. Is this investment identified in a completed and approved segment architecture?	No
a. If "yes," provide the six digit code corresponding to the agency segment architecture. The segment architecture codes are maintained by the agency Chief Architect. For detailed guidance regarding segment architecture codes, please refer to http://www.egov.gov.	115-000

4. Service Component Reference Model (SRM) Table:
Identify the service components funded by this major IT investment (e.g., knowledge management, content management, customer relationship management, etc.). Provide this information in the format of the following table. For detailed guidance regarding components, please refer to http://www.egov.gov.

Agency Component Name	Agency Component Description	FEA SRM Service Domain	FEA SRM Service Type	FEA SRM Component (a)	Service Component Reused Name (b)	Service Component Reused UPI (b)	Internal or External Reuse? (c)	BY Funding Percentage (d)
Data Warehouse	Resources to support archiving and retrieval of large volumes of data.	Back Office Services	Data Management	Data Warehouse			No Reuse	12
Data Mining	Provide for the efficient discovery of non-obvious, valuable patterns and relationships within a large collection of data	Business Analytical Services	Knowledge Discovery	Data Mining			No Reuse	24
Simulation	Utilize models to mimic real-world processes.	Business Analytical Services	Knowledge Discovery	Simulation			No Reuse	54
Multimedia	Support the representation of information in more than one form to include text, audio, graphics, animated	Business Analytical Services	Visualization	Multimedia			No Reuse	2

4. Service Component Reference Model (SRM) Table:
Identify the service components funded by this major IT investment (e.g., knowledge management, content management, customer relationship management, etc.). Provide this information in the format of the following table. For detailed guidance regarding components, please refer to http://www.egov.gov.

Agency Component Name	Agency Component Description	FEA SRM Service Domain	FEA SRM Service Type	FEA SRM Component (a)	Service Component Reused Name (b)	Service Component Reused UPI (b)	Internal or External Reuse? (c)	BY Funding Percentage (d)
	graphics and full motion video.							
Program / Project Management	Manage and control a particular effort of an organization	Business Management Services	Management of Processes	Program / Project Management			No Reuse	2
Self-Service	Allow an organization's customers to sign up for a particular service at their own initiative.	Customer Services	Customer Initiated Assistance	Self-Service			No Reuse	2
		Support Services	Security Management				No Reuse	2
System Resource Monitoring	Support the balance and allocation of memory, usage, disk space and performance on computers and their applications.	Support Services	Systems Management	System Resource Monitoring			No Reuse	2

a. Use existing SRM Components or identify as "NEW". A "NEW" component is one not already identified as a service component in the FEA SRM.

b. A reused component is one being funded by another investment, but being used by this investment. Rather than answer yes or no, identify the reused service component funded by the other investment and identify the other investment using the Unique Project Identifier (UPI) code from the OMB Ex 300 or Ex 53 submission.

c. 'Internal' reuse is within an agency. For example, one agency within a department is reusing a service component provided by another agency within the same department. 'External' reuse is one agency within a department reusing a service component provided by another agency in another department. A good example of this is an E-Gov initiative service being reused by multiple organizations across the federal government.

d. Please provide the percentage of the BY requested funding amount used for each service component listed in the table. If external, provide the percentage of the BY requested funding amount transferred to another agency to pay for the service. The percentages in the column can, but are not required to, add up to 100%.

5. Technical Reference Model (TRM) Table:
To demonstrate how this major IT investment aligns with the FEA Technical Reference Model (TRM), please list the Service Areas, Categories, Standards, and Service Specifications supporting this IT investment.

FEA SRM Component (a)	FEA TRM Service Area	FEA TRM Service Category	FEA TRM Service Standard	Service Specification (b) (i.e., vendor and product name)
Simulation	Component Framework	Business Logic	Platform Independent Technologies	
Simulation	Component Framework	Business Logic	Platform Independent Technologies	
Simulation	Component Framework	Business Logic	Platform Independent Technologies	
Simulation	Component Framework	Business Logic	Platform Independent Technologies	
System Resource Monitoring	Component Framework	Data Management	Reporting and Analysis	
System Resource Monitoring	Component Framework	Data Management	Reporting and Analysis	
Identification and Authentication	Component Framework	Security	Certificates / Digital Signatures	
Multimedia	Component Framework	User Presentation / Interface	Content Rendering	
Self-Service	Component Framework	User Presentation / Interface	Dynamic Server-Side Display	
Self-Service	Service Access and Delivery	Access Channels	Collaboration / Communications	
Program / Project Management	Service Access and Delivery	Access Channels	Collaboration / Communications	
Program / Project Management	Service Access and Delivery	Service Requirements	Hosting	
System Resource Monitoring	Service Access and Delivery	Service Requirements	Hosting	
Data Warehouse	Service Access and Delivery	Service Transport	Service Transport	
	Service Access and Delivery	Service Transport		

5. Technical Reference Model (TRM) Table:
To demonstrate how this major IT investment aligns with the FEA Technical Reference Model (TRM), please list the Service Areas, Categories, Standards, and Service Specifications supporting this IT investment.

FEA SRM Component (a)	FEA TRM Service Area	FEA TRM Service Category	FEA TRM Service Standard	Service Specification (b) (i.e., vendor and product name)
Data Mining	Service Platform and Infrastructure	Database / Storage	Database	
Data Warehouse	Service Platform and Infrastructure	Database / Storage	Storage	
Data Mining	Service Platform and Infrastructure	Database / Storage	Storage	
Self-Service	Service Platform and Infrastructure	Delivery Servers	Web Servers	
Data Mining	Service Platform and Infrastructure	Hardware / Infrastructure	Local Area Network (LAN)	
Simulation	Service Platform and Infrastructure	Hardware / Infrastructure	Servers / Computers	
Simulation	Service Platform and Infrastructure	Support Platforms	Dependent Platform	
Simulation	Service Platform and Infrastructure	Support Platforms	Independent Platform	

a. Service Components identified in the previous question should be entered in this column. Please enter multiple rows for FEA SRM Components supported by multiple TRM Service Specifications

b. In the Service Specification field, agencies should provide information on the specified technical standard or vendor product mapped to the FEA TRM Service Standard, including model or version numbers, as appropriate.

6. Will the application leverage existing components and/or applications across the Government (i.e., USA.gov, Pay.Gov, etc)? No

a. If "yes," please describe.

This project leverages other Government investments across agencies, such as the DOE ESnet and other federal networking investments. It leverages other existing DOE-SC National Laboratory investments, such as DOE-SC LCF sites at ORNL and ANL, to collaborate in scientific research projects. The project also has benefited from technology first introduced at scale in the NNSA ASC program. This investment does not have a requirement or need for applications such as FirstGov, Pay.Gov, etc. NERSC is a vanguard, high-end scientific computing facility and as such, is not interconnected with federal business systems.

Exhibit 300: Part II: Planning, Acquisition and Performance Information

Section A: Alternatives Analysis (All Capital Assets)

Part II should be completed only for investments identified as "Planning" or "Full Acquisition," or "Mixed Life-Cycle" investments in response to Question 6 in Part I, Section A above.

In selecting the best capital asset, you should identify and consider at least three viable alternatives, in addition to the current baseline, i.e., the status quo. Use OMB Circular A-94 for all investments and the Clinger Cohen Act of 1996 for IT investments to determine the criteria you should use in your Benefit/Cost Analysis.

1. Did you conduct an alternatives analysis for this project? Yes

a. If "yes," provide the date the analysis was completed? 8/15/2008

b. If "no," what is the anticipated date this analysis will be completed?

c. If no analysis is planned, please briefly explain why:

2. Alternative Analysis Results: * Costs in millions

Use the results of your alternatives analysis to complete the following table:

Alternative Analyzed	Description of Alternative	Risk Adjusted Lifecycle Costs estimate	Risk Adjusted Lifecycle Benefits estimate

3. Which alternative was selected by the Agency's Executive/Investment Committee and why was it chosen?

The alternative chosen was the Flagship Center because it maximizes the net benefits to DOE. First, it provides the needed computation research hours (CRHs) in the time frame necessary to meet the performance gap described in the business case, section I.A.8. Secondly, it allows for economies of scale to be achieved in terms of staff and hardware which is reflected in a higher net present value of life cycle benifits. Finally, it provides one large system, to support large parallel applications needed for large scale science, core to DOE's mission. The other options, do not deliver the required computational resouces (status quo), do not yield the greatest net present value for life cycle benefits or the cost exceed the benefits gained. The total Life Cycle Cost (LCC) however was calcualted on 2006 through 2014 period. Note: Costs and benefits in this section are discounted to reflect the cost of money at 2.6% and are not meant to be a budget request as identified in the summary of spending.

a. What year will the investment breakeven? (Specifically, when the budgeted costs savings exceed the cumulative costs.) 2013

4. What specific qualitative benefits will be realized?

The alternative chosen is Flagship Center NERSC as this alternative provides the benefits that are measured in Section I.D. While this alternative provides the greatest benefit for the least cost, this alternative allows DOE to support large parallel capability applications that would not be possible with smaller distributed systems. Also, with a full dedicated NERSC staff, early assessment and introduction of new technology and development and deployment of specialized software would be part of the services offered to the DOE science community as well as enhanced and more comprehensive cyber security. Finally, as part of achieving economies of scale, NERSC increases its purchasing power with the higher scale purchases.

5. Federal Quantitative Benefits

What specific quantitative benefits will be realized (using current dollars) Use the results of your alternatives analysis to complete the following table:

	Budgeted Cost Savings	Cost Avoidance	Justification for Budgeted Cost Savings	Justification for Budgeted Cost Avoidance
PY - 1 2007 & Prior	6.16	0	Budgeted savings DOE realized based on total amount of computation hours allocated to DOE scientists for FY06 & FY07	Not applicable, 2006 2008 are sunk costs.
PY 2008	24.86	0	Budgeted savings DOE realized based on total amount of computation hours allocated to DOE scientists for FY08	Not applicable, 2006 2008 are sunk costs.
CY 2009	31.66	261.79	Projected budgeted cost savings to DOE based on projected amount of computation hours NERSC will provide to DOE scientists for FY09	Annual cost avoidance if alternative 2 was choosen
BY 2010	61.88	259.39	Projected budgeted cost savings to DOE based on projected amount of computation hours NERSC will provide to DOE scientists for FY10	Annual cost avoidance if alternative 2 was choosen

5. Federal Quantitative Benefits
What specific quantitative benefits will be realized (using current dollars) Use the results of your alternatives analysis to complete the following table:

	Budgeted Cost Savings	Cost Avoidance	Justification for Budgeted Cost Savings	Justification for Budgeted Cost Avoidance
BY + 1 2011	89.19	271.65	Projected budgeted cost savings to DOE based on projected amount of computation hours NERSC will provide to DOE scientists for FY11	Annual cost avoidance if alternative 2 was choosen
BY + 2 2012	127.97	252.64	Projected budgeted cost savings to DOE based on projected amount of computation hours NERSC will provide to DOE scientists for FY12	Annual cost avoidance if alternative 2 was choosen
BY + 3 2013	199.4	441.94	Projected budgeted cost savings to DOE based on projected amount of computation hours NERSC will provide to DOE scientists for FY13	Annual cost avoidance if alternative 2 was choosen
BY + 4 2014 & Beyond	220.31	491.04	Projected budgeted cost savings to DOE based on projected amount of computation hours NERSC will provide to DOE scientists for FY14	Annual cost avoidance if alternative 2 was choosen
Total LCC Benefit	761.43	1978.45	LCC = Life-cycle Cost	

6. Will the selected alternative replace a legacy system in-part or in-whole? No

a. If "yes," are the migration costs associated with the migration to the selected alternative included in this investment, the legacy investment, or in a separate migration investment?

b. If "yes," please provide the following information:

5b. List of Legacy Investment or Systems

Name of the Legacy Investment of Systems	UPI if available	Date of the System Retirement

Section B: Risk Management (All Capital Assets)

You should have performed a risk assessment during the early planning and initial concept phase of this investment's life-cycle, developed a risk-adjusted life-cycle cost estimate and a plan to eliminate, mitigate or manage risk, and be actively managing risk throughout the investment's life-cycle.

1. Does the investment have a Risk Management Plan? Yes

a. If "yes," what is the date of the plan? 3/27/2009

b. Has the Risk Management Plan been significantly changed since last year's submission to OMB? No

c. If "yes," describe any significant changes:

2. If there currently is no plan, will a plan be developed?

a. If "yes," what is the planned completion date?

b. If "no," what is the strategy for managing the risks?

3. Briefly describe how investment risks are reflected in the life cycle cost estimate and investment schedule:

Lifecycle risks are mitigated through procuring integrated solutions that include software, hardware and maintenance through a rigorous procurement process that incorporate initial and lifecycle performance benchmarks which include actual scientific codes representative of the NERSC workload. Large scale computational systems go through factory testing and extensive acceptance testing. The NERSC Program stages major systems so that NERSC will always have at least one major system in production while new systems are installed and vetted. The DME, or project, phase of this investment is complete after systems acceptance. Mature systems have options to extend their lifecycle if needed to cover new system delays. Infrastructure improvements are coordinated so that the science community can make effective use of the major systems. All systems are effectively managed for performance, functionality and security to ensure that scientific users have reliable computational resources that meet their needs. By managing risk mitigation, NERSC will achieve the risk adjusted life cycle cost estimate.

Section C: Cost and Schedule Performance (All Capital Assets)

EVM is required only on DME portions of investments. For mixed lifecycle investments, O&M milestones should still be included in the table (Comparison of Initial Baseline and Current Approved Baseline). This table should accurately reflect the milestones in the initial baseline, as well as milestones in the current baseline.

1. Does the earned value management system meet the criteria in ANSI/EIA Standard-748?	Yes
2. Is the CV% or SV% greater than +/- 10%? (CV%= CV/EV x 100; SV%= SV/PV x 100)	No
a. If "yes," was it the CV or SV or both?	
b. If "yes," explain the causes of the variance:	
c. If "yes," describe the corrective actions:	
3. Has the investment re-baselined during the past fiscal year?	No
a. If "yes," when was it approved by the agency head?	

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in $ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost ($M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost ($M)		Schedule (# days)	Cost ($M)	
				Planned	Actual	Planned	Actual			
1	FY06 SS Program Management	12/31/2005	$0.270000	12/31/2005	12/31/2005	$0.300000	$0.300000	0	$0.000000	100%
2	FY06 DME Lease to Own Payments	12/31/2005	$1.380000	12/31/2005	12/31/2005	$1.380000	$1.380000	0	$0.000000	100%
3	FY06 SS Maintenance Operations	12/31/2005	$3.660000	12/31/2005	12/31/2005	$3.750000	$3.750000	0	$0.000000	100%
4	FY06 SS Maintenance Operations	3/31/2006	$0.290000	3/31/2006	3/31/2006	$0.300000	$0.300000	0	$0.000000	100%
5	FY06 DME Lease to Own Payments	3/31/2006	$1.380000	3/31/2006	3/31/2006	$1.380000	$1.380000	0	$0.000000	100%
6	FY06 SS Program Management	3/31/2006	$7.340000	3/31/2006	3/31/2006	$7.400000	$7.400000	0	$0.000000	100%
7	FY06 SS Maintenance Operations	6/30/2006	$0.300000	6/30/2006	6/30/2006	$0.290000	$0.290000	0	$0.000000	100%
8	FY06 DME Lease to Own Payments	6/30/2006	$1.380000	6/30/2006	6/30/2006	$1.380000	$1.380000	0	$0.000000	100%
9	FY06 SS Program Management	6/30/2006	$5.230000	6/30/2006	6/30/2006	$4.230000	$4.230000	0	$0.000000	100%
10	FY06 SS Program Management	9/30/2006	$0.290000	9/30/2006	9/30/2006	$0.290000	$0.290000	0	$0.000000	100%
11	FY06 DME Lease to Own Payments	9/30/2006	$1.330000	9/30/2006	9/30/2006	$1.290000	$1.290000	0	$0.000000	100%
12	FY06 SS Maintenance Operations	9/30/2006	$8.770000	9/30/2006	9/30/2006	$8.860000	$8.860000	0	$0.000000	100%
13	FY06 DME NERSC-5 Activities	9/30/2006	$5.660000	9/30/2006	9/30/2006	$5.660000	$5.660000	0	$0.000000	100%
14	FY07 SS Vendor Maintenance and Lease Payments	9/30/2007	$24.090000	9/30/2007	9/30/2007	$5.590000	$5.590000	0	$0.000000	100%
15	FY07 SS Contractor Management and Oversight	9/30/2007	$1.050000	9/30/2007	9/30/2007	$0.650000	$0.650000	0	$0.000000	100%
16	FY07 SS Facility Services and Infrastructure	9/30/2007	$27.540000	9/30/2007	9/30/2007	$19.840000	$19.840000	0	$0.000000	100%
17	FY07 SS Internal Security Review	9/30/2007	$2.310000	9/30/2007	9/30/2007	$0.100000	$0.100000	0	$0.000000	100%
18	FY07 DME NERSC-5 and NERSC-6 Activities	9/30/2007	$0.800000	9/30/2007	9/30/2007	$4.830000	$4.830000	0	$0.000000	100%

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in $ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost ($M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost ($M)		Schedule (# days)	Cost ($M)	
				Planned	Actual	Planned	Actual			
19	FY07 SS Facility Subsystem Balance	9/30/2007	$0.000000	9/30/2007	9/30/2007	$1.650000	$1.650000	0	$0.000000	100%
20	FY08 SS Vendor and Maintenance Payment and Monthly Lease Payments.		$0.000000	9/30/2008	9/30/2008	$15.970000	$7.760000	0	$8.210000	100%
21	FY08 SS Initial Lease Payment		$0.000000	12/31/2007	12/31/2007	$12.730000	$12.677000	0	$0.053000	100%
22	FY08 SS March Lease Payment.		$0.000000	3/30/2008	3/30/2008	$5.280000	$5.303000	0	-$0.023000	100%
23	FY08 SS Facility Services and Infrastructure.	9/30/2008	$25.000000	9/30/2008	9/30/2008	$23.670000	$22.070000	0	$1.600000	100%
24	FY08 SS Facility Subsystem Balance.	9/30/2008	$4.040000	9/30/2008	9/30/2008	$6.280000	$4.160000	0	$2.120000	100%
25	FY08 DME NERSC-5 and NERSC -6 Activities.	9/30/2008	$0.000000	9/30/2008	9/30/2008	$0.560000	$0.570000	0	-$0.010000	100%
26	FY08 SS Internal Security Review.	9/30/2008	$0.000000	9/30/2008	9/30/2008	$0.100000	$0.100000	0	$0.000000	100%
27	FY09 SS Vendor Maintenance and Lease Payments Actual costs and percent complete reflect a 01/31/09 As of Date	9/30/2009	$26.930000	9/30/2009		$18.850000	$9.810000		-$3.589500	33%
28	FY09 SS Facility Services and Infrastructure Actual costs and percent complete reflect a 01/31/09 As of Date	9/30/2009	$25.180000	9/30/2009		$22.240000	$6.530000		$0.809200	33%
29	FY09 SS Facility Subsystem Balance Actual costs and percent complete reflect a 01/31/09 As of Date	9/30/2009	$4.260000	9/30/2009		$0.900000	$1.310000		-$1.013000	33%
30	FY09 DME NERSC-6 Activities Actual costs and percent complete reflect a 01/31/09 As of Date	9/30/2009	$0.520000	9/30/2009		$9.700000	$0.450000		$2.751000	33%
31	FY09 SS Internal Security Review Actual costs and	9/30/2009	$0.000000	9/30/2009		$0.100000	$0.000000		$0.000000	0%

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in $ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost ($M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost ($M)		Schedule (# days)	Cost ($M)	
				Planned	Actual	Planned	Actual			
	percent complete reflect a 01/31/09 As of Date									
32	FY10 SS Vendor Maintenance and Lease Payments	9/30/2010	$29.000000	9/30/2010		$24.660000				0%
33	FY10 SS Facility Services and Infrastructure	9/30/2010	$25.560000	9/30/2010		$26.230000				0%
34	FY10 SS Facility Subsystem Balance	9/30/2010	$4.480000	9/30/2010		$3.300000				0%
35	FY10 DME NERSC-6 and NERSC-7 Activities	9/30/2010	$0.820000	9/30/2010		$0.500000				0%
36		9/30/2010	$0.000000	9/30/2010		$0.100000				0%
37	FY11 SS Vendor Maintenance and Lease Payments	9/30/2011	$32.080000	9/30/2011		$28.760000				0%
38	FY11 SS Facility Services and Infrastructure	9/30/2011	$26.170000	9/30/2011		$27.040000				0%
39	FY11 SS Facility Subsystem Balance	9/30/2011	$4.780000	9/30/2011		$3.300000				0%
40	FY11 DME NERSC-7 Activities	9/30/2011	$0.800000	9/30/2011		$0.800000				0%
41		9/30/2011	$0.000000	9/30/2011		$0.100000				0%
42	FY12 SS Vendor Maintenance and Lease Payments	9/30/2012	$36.560000	9/30/2012		$26.890000				0%
43	FY12 SS Facility Services and Infrastructure	9/30/2012	$26.950000	9/30/2012		$27.210000				0%
44	FY12 SS Facility Subsystem Balance	9/30/2012	$3.950000	9/30/2012		$3.300000				0%
45	FY12 DME NERSC-7 Activities	9/30/2012	$0.970000	9/30/2012		$7.500000				0%
46		9/30/2012	$0.100000	9/30/2012		$0.100000				0%
47	FY13 SS Vendor Maintenance and Lease Payments	9/30/2013	$16.190000	9/30/2013		$31.870000				0%
48	FY13 SS Facility Services and Infrastructure	9/30/2013	$28.080000	9/30/2013		$29.130000				0%

4. Comparison of Initial Baseline and Current Approved Baseline

Complete the following table to compare actual performance against the current performance baseline and to the initial performance baseline. In the Current Baseline section, for all milestones listed, you should provide both the baseline and actual completion dates (e.g., "03/23/2003"/ "04/28/2004") and the baseline and actual total costs (in $ Millions). In the event that a milestone is not found in both the initial and current baseline, leave the associated cells blank. Note that the 'Description of Milestone' and 'Percent Complete' fields are required. Indicate '0' for any milestone no longer active.

Milestone Number	Description of Milestone	Initial Baseline		Current Baseline				Current Baseline Variance		Percent Complete
		Planned Completion Date (mm/dd/yyyy)	Total Cost ($M) Estimated	Completion Date (mm/dd/yyyy)		Total Cost ($M)		Schedule (# days)	Cost ($M)	
				Planned	Actual	Planned	Actual			
49	FY13 SS Facility Subsystem Balance	9/30/2013	$3.190000	9/30/2013		$3.300000				0%
50	FY13 DME NERSC-7 Activities	9/30/2013	$0.540000	9/30/2013		$0.600000				0%
51		9/30/2013	$0.100000	9/30/2013		$0.100000				0%
52	FY14 SS Vendor Maintenance and Lease Payments	9/30/2014	$16.190000	9/30/2014		$30.710000				0%
53	FY14 SS Facility Services and Infrastructure	9/30/2014	$28.080000	9/30/2014		$30.090000				0%
54	FY14 SS Facility Subsystem Balance	9/30/2014	$3.190000	9/30/2014		$3.300000				0%
55	FY14 DME NERSC-7 Activities	9/30/2014	$0.540000	9/30/2014		$0.800000				0%
56		9/30/2014	$0.100000	9/30/2014		$0.100000				0%
Project Totals		**9/30/2014**	**$467.420000**	**9/30/2014**	**9/30/2008**	**$495.340000**	**$139.910000**	**2191**	**$10.921030**	**30.45%**